

Amendments to the Specification:

Please replace the title of the specification to read as follows:

Methods for Inhibition of Membrane Fusion-Associated Events, including Hepatitis B Virus Transmission

On page 7, line 30 to page 8, line 10, please replace the paragraph beginning "The invention further relates to peptides DP107" with the following paragraph:

The invention further relates to ~~peptide~~ DP107 (SEQ ID NO:89) peptide analogs. DP107 is a peptide corresponding to amino acids 558-595 of the HIV-1LAI transmembrane protein (TM) gp41. The term "DP107 analog" as used herein refers to a peptide which contains an amino acid sequence corresponding to the DP107 sequence present within the gp41 protein of HIV-1_{LAI}, but found in viruses and organisms other than HIV-1_{LAI}. Such DP107 analog peptides may, therefore, correspond to DP107-like amino acid sequences present in other viruses, such as, for ~~for~~ example, enveloped viruses, such as retroviruses other than HIV-1_{LAI}, as well as non-enveloped viruses. Further, such DP107 analog peptides may also correspond to DP107-like amino acid sequences present in nonviral organisms.

On page 16, lines 11-16, please replace the paragraph beginning "FIG. 27A-D" with the following paragraph:

~~FIGS. 27A-D:~~ FIGS. 27A-F: Respiratory Syncytial Virus (RSV) peptide (SEQ ID NO:97) antiviral and circular dichroism data. ~~FIG. 27A-B:~~ FIGS. 27A-C: Peptides derived from the F2 DP178/DP107-like ~~region:~~ region: [T-22: (SEQ ID NO:121); T-68: (SEQ ID NO:122); T-334: (SEQ ID NO:123); T-371: (SEQ ID NO:124); T-372: (SEQ ID NO:125); T-373: (SEQ ID NO:126); T-374: (SEQ ID NO:127); T-375:(SEQ ID NO:128); T-575:(SEQ ID NO:129)]. Antiviral and CD data. ~~FIG. 27C-D:~~ FIGS. 27D-F: Peptides derived from the F1 DP107-like ~~region:~~ region: [F1-107: (SEQ ID NO:98); T-12: (SEQ ID NO:130); T-13: (SEQ ID NO:131); T-15: (SEQ ID NO:132); T-19: (SEQ ID NO:133); T-28: (SEQ ID NO:134); T-30: (SEQ ID NO:135); T-66: (SEQ ID NO:136); T-576: (SEQ ID NO:137)]. Peptide and CD data.

On page 17, lines 3-7, please replace the paragraph beginning "FIG. 28A-B" with the following paragraph:

~~FIG. 28A-B.~~ FIGS. 28A-C: Respiratory Syncytial Virus (RSV) DP178-like region (F1) peptide antiviral and CD data [F1-178: (SEQ ID NO:99); T-71: (SEQ ID NO:138); T-384: (SEQ ID NO:139); T-616: (SEQ ID NO:140); T-617: (SEQ ID NO:141); T-662: (SEQ ID NO:142); T-665: (SEQ ID NO:143); T-671: (SEQ ID NO:144); T-730: (SEQ ID NO:145)]. Antiviral symbols, CD symbols, and IC₅₀ are as in ~~FIG. 27A-D.~~ FIGS. 27A-F. IC₅₀ values were obtained using purified peptides only.

On page 17, lines 8-15, please replace the paragraph beginning "FIG. 29A-B" with the following paragraph:

~~FIG. 29A-B.~~ FIGS. 29A-E: Peptides derived from the HPIV3 F1 DP107-like region. Peptide antiviral and CD data [HPF1 107: (SEQ ID NO:100); T-42: (SEQ ID NO:146); T-39: (SEQ ID NO:147); T-40: (SEQ ID NO:148); T-45: (SEQ ID NO:149); T-46: (SEQ ID NO:150); T-582: (SEQ ID NO:151)]. Antiviral symbols, CD symbols, and IC₅₀ are as in ~~FIG. 27A-D.~~ FIGS. 27A-F. Purified peptides were used to obtain IC₅₀ values, except where the values are marked by an asterisk (*), ~~in which cases,~~ in such cases, the IC₅₀ values were obtained using a crude peptide preparation.

On page 17, lines 15-20, please delete the paragraph beginning "FIG. 29C. HPIV3 peptide T-184 CD spectrum."

On page 17, lines 20-27, please replace the paragraph beginning "FIG. 30A-B." with the following paragraph:

~~FIG. 30A-B.~~ FIGS. 30A-C: Peptides derived from the HPIV3 F1 DP178-like region. Peptide antiviral and CD data [HPF3 178: (SEQ ID NO:101); T-269: (SEQ ID NO:152); T-626: (SEQ ID NO:153); T-383: (SEQ ID NO:154); T-577: (SEQ ID NO:155); T-578: (SEQ ID NO:156); T-579: (SEQ ID NO:157)]. Antiviral symbols, CD symbols, and IC₅₀ are as in ~~FIG. 27A-D.~~ FIGS. 27A-F. Purified peptides were used to obtain IC₅₀ values, except where

the values are marked by an asterisk (*), ~~in which cases;~~ in such cases, the IC₅₀ values were obtained using a crude peptide preparation.

On page 19, lines 12-15, please replace the paragraph beginning "FIG. 47." with the following paragraph:

~~FIG. 47. FIGS. 47A-B:~~ Measles virus (MeV) fusion protein DP178-like region antiviral and CD data [T-252A0: (SEQ ID NO:118); T-268A0: (SEQ ID NO:119)] .
Antiviral symbols, CD symbols, and IC₅₀ are as in ~~FIG. 27A-D~~ FIGS. 27A-F.

On page 19, lines 10-13, please replace the paragraph beginning "FIG. 48." with the following paragraph:

~~FIG. 48. FIGS. 48A-B:~~ Simian immunodeficiency virus (SIV) TM (fusion) protein DP178-like region antiviral data (SEQ ID NO:120) . Antiviral symbols are as in ~~FIG. 27A-D~~ FIGS. 27A-F. "NT", not tested.

On page 19, lines 20-23, please replace the paragraph beginning "FIG. 49A-C." with the following paragraph:

~~FIG. 49A-C. FIGS. 49A-L:~~ DP178-derived peptide antiviral data [(~~SEQ ID NO:158~~); T50: (SEQ ID NO:159); (~~SEQ ID NO:160~~); T234: (SEQ ID NO:161); T235: (SEQ ID NO:162); T570: (SEQ ID NO:163); T381: (SEQ ID NO:164); T677: (SEQ ID NO:165); T589: (SEQ ID NO:166); T590: (SEQ ID NO:167); T591: (SEQ ID NO:168); T270: (SEQ ID NO:169); T271: (SEQ ID NO:170); T273: (SEQ ID NO:171); T608: (SEQ ID NO:172); T609: (SEQ ID NO:173); T610: (SEQ ID NO:174); T611: (SEQ ID NO:175); T612: (SEQ ID NO:176); T595: (SEQ ID NO:177); T95: (SEQ ID NO:178); T96: (SEQ ID NO:179); T97: (SEQ ID NO:180); T98: (SEQ ID NO:181); T99: (SEQ ID NO:182); T103: (SEQ ID NO:183); T212: (SEQ ID NO:184); T213: (SEQ ID NO:185); T214: (SEQ ID NO:186); T215: (SEQ ID NO:187); T216: (SEQ ID NO:188); T229: (SEQ ID NO:189); T230: (SEQ ID NO:190); T231: (SEQ ID NO:191); T379: (SEQ ID NO:192); T701: (SEQ ID NO:193); T702: (SEQ ID NO:194); T703: (SEQ ID NO:195); T704: (SEQ ID NO:196); T705: (SEQ ID NO:197); T706: (SEQ ID NO:198); T156: (SEQ ID NO:199); T90: (SEQ ID NO:200)].

The peptides listed herein were derived from the region surrounding the HIV-1 BRU isolate DP178 region (e.g., gp41 amino acid residues 615-717).

On page 19, line 25 to page 20, line 20, please replace the paragraph beginning “In instances where peptides” with the following paragraph:

In instances where peptides contained DP178 point mutations, the mutated amino acid residues are shown with a shaded background. In instances in which the test peptide has had an amino and/or carboxy-terminal group added or removed (apart from the standard amido- and acetyl- blocking groups found on such peptides), such modifications are indicated. ~~FIG. 49A:~~ FIGS. 49A, 49C: The column to the immediate right of the name of the test peptide indicates the size of the test peptide and points out whether the peptide is derived from a one amino acid peptide “walk” across the DP178 region. The next column to the right indicates whether the test peptide contains a point mutation, while the column to its right indicates whether certain amino acid residues have been added to or removed from the DP178-derived amino acid sequence. ~~FIG. 49B:~~ FIGS. 49E, 49G: The column to the immediate right of the test peptide name indicates whether the peptide represents a DP178 truncation, the next column to the right points out whether the peptide contains a point mutation, and the column to its right indicates whether the peptide contains amino acids which have been added to or removed from the DP178 sequence itself. ~~FIG. 49C:~~ FIGS. 49I, 49K: The column to the immediate right of the test peptide name indicates whether the test peptide contains a point mutation, while the column to its right indicates whether amino acid residues have been added to or removed from the DP178 sequence itself. ~~IC₅₀ is as defined in FIG. 27A-D,~~ FIGS. 27A-F, and IC₅₀ values were obtained using purified peptides except where marked with an asterisk (*), in which case the IC₅₀ was obtained using a crude peptide preparation.

On page 20, lines 21-26, please replace the paragraph beginning “FIG. 50.” with the following paragraph:

~~FIG. 50:~~ FIGS. 50A-B: DP107 and DP107 gp41 region truncated peptide antiviral data (SEQ ID NO:201). IC₅₀ as defined in ~~FIG. 27A-D~~ FIGS. 27A-F, and IC₅₀

values were obtained using purified peptides except where marked with an asterisk (*), in which case the IC₅₀ was obtained using a crude peptide preparation.

On page 20, lines 27-34, please replace the paragraph beginning "FIG. 51A-B." with the following paragraph:

~~FIG. 51A-B.~~ FIGS. 51A-C: Epstein-Barr virus Strain B95-8 BLZF1 DP178/DP107 analog region peptide walks and electrophoretic mobility shift assay results. The peptides [173-219: (SEQ ID NO:202); 185-230: (SEQ ID NO:203); T-446: (SEQ ID NO:204); 197-242: (SEQ ID NO:205); T-458: (SEQ ID NO:206); 209-246: (SEQ ID NO:207)] (~~T-423 to T-446~~ T-423 to T-434, FIG. 51A; ~~T-447 to T-461~~ T-435 to T-446, FIG. 51B; T-447 to T-449, T-451 to T-458 and T-459 to T-461, FIG. 51C) represent one amino acid residue "walks" through the EBV Zebra protein region from amino acid residue 173 to 246.

On page 26, lines 1-26, please replace the table under the heading "Table I" with the following replacement text:

TABLE I

DP178 (SEQ ID NO:1) CARBOXY TRUNCATIONS*

X-YTS-Z
X-YTSL-Z
X-YTSLI-Z
X-YTSLIH-Z
X-YTSLIHS-Z
X-YTSLIHSL-Z
X-YTSLIHSLI-Z
X-YTSLIHSLIE-Z
X-YTSLIHSLIEE-Z
X-YTSLIHSLIEES-Z
X-YTSLIHSLIEESQ-Z
X-YTSLIHSLIEESQN-Z
X-YTSLIHSLIEESQNNQ-Z
X-YTSLIHSLIEESQNNQQ-Z
X-YTSLIHSLIEESQNNQQE-Z
X-YTSLIHSLIEESQNNQQEK-Z
X-YTSLIHSLIEESQNNQQEKN-Z
X-YTSLIHSLIEESQNNQQEKNE-Z
X-YTSLIHSLIEESQNNQQEKNEQ-Z
X-YTSLIHSLIEESQNNQQEKNEQE-Z
X-YTSLIHSLIEESQNNQQEKNEQEEL-Z
X-YTSLIHSLIEESQNNQQEKNEQEELL-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLE-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELD-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDK-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKW-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKWA-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKWASL-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKWASLW-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKWASLWN-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKWASLWNW-Z
X-YTSLIHSLIEESQNNQQEKNEQEELLELDKWASLWNWF-Z
(SEQ ID NO:1)

(^{*} The one-letter amino acid code is used)

On page 27, lines 1-26, please replace the table under the heading "TABLE IA" with the following text:

TABLE IA
DP178 (SEQ ID NO:1) AMINO TRUNCATIONS*

X-NWF-Z
X-WNWF-Z
X-LWNWF-Z
X-SLWNWF-Z
X-ASLWNWF-Z
X-WASLWNWF-Z
X-KWASLWNWF-Z
X-DKWASLWNWF-Z
X-LDKWASLWNWF-Z
X-ELDKWASLWNWF-Z
X-LELDKWASLWNWF-Z
X-LLELDKWASLWNWF-Z
X-ELLELDKWASLWNWF-Z
X-QELLELDKWASLWNWF-Z
X-EQELLELDKWASLWNWF-Z
X-NEQELLELDKWASLWNWF-Z
X-KNEQELLELDKWASLWNWF-Z
X-EKNEQELLELDKWASLWNWF-Z
X-QEKNEQELLELDKWASLWNWF-Z
X-QQEKNEQELLELDKWASLWNWF-Z
X-NQQEKNEQELLELDKWASLWNWF-Z
X-QNQQEKNEQELLELDKWASLWNWF-Z
X-SQNQQEKNEQELLELDKWASLWNWF-Z
X-ESQNQQEKNEQELLELDKWASLWNWF-Z
X-EESQNQQEKNEQELLELDKWASLWNWF-Z
X-IEESQNQQEKNEQELLELDKWASLWNWF-Z
X-LIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-SLIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-HSLIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-IHSLIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-LIHSLIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-SLIHSLIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-TSLIHSLIEESQNQQEKNEQELLELDKWASLWNWF-Z
X-YTSLIHSLIEESQNQQEKNEQELLELDKWASLWNWF-Z
(SEQ ID NO:1)

(^{*}The one-letter amino acid code is used.)

On page 30, lines 21-30, please replace the paragraph beginning with "Further, the peptides of the invention" with the following paragraph:

Further, the peptides of the invention include peptides having amino acid sequences corresponding to DP107 analogs. DP107 is a 38 amino acid peptide which exhibits potent antiviral activity, and corresponds to residues 558 to 595 of HIV-1_{LAI} transmembrane (TM) gp41 protein, as shown here:

~~NH₂-NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ-COOH~~

NH₂-NNLLRAIEAQQHLLQLTVWGIKQLQARILAVERYLKDQ-COOH
(SEQ ID NO:89)

On page 32, lines 1-28, please replace the table under the heading "TABLE II" with the following text:

TABLE II

DP107 (SEQ ID NO:89) CARBOXY TRUNCATIONS*

X-NNL-Z
X-NNLL-Z
X-NNLLR-Z
X-NNLLRA-Z
X-NNLLRAI-Z
X-NNLLRAIE-Z
X-NNLLRAIEA-Z
X-NNLLRAIEAQ-Z
X-NNLLRAIEAQQ-Z
X-NNLLRAIEAQQH-Z
X-NNLLRAIEAQQHL-Z
X-NNLLRAIEAQQHLL-Z
X-NNLLRAIEAQQHLLQ-Z
X-NNLLRAIEAQQHLLQL-Z
X-NNLLRAIEAQQHLLQLT-Z
X-NNLLRAIEAQQHLLQLTV-Z
X-NNLLRAIEAQQHLLQLTVW-Z
X-NNLLRAIEAQQHLLQLTVWQG-Z
X-NNLLRAIEAQQHLLQLTVWQGI-Z
X-NNLLRAIEAQQHLLQLTVWQGIK-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQ-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQL-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQ-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQA-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQAR-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARI-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARIL-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILA-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAV-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVE-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVR-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVERY-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVERYL-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVERYLK-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVERYLKD-Z
X-NNLLRAIEAQQHLLQLTVWQGIKQLQARILAVERYLKDQ-Z
Z (SEQ ID NO:89)

(* The one-letter amino acid code is used.)

On page 33, lines 1-27, please replace the table under the heading "TABLE IIA" with the following text:

TABLE IIA

DP178 DP107 (SEQ ID NO:89) AMINO TRUNCATIONS*

X-KDQ- Z
X-LKDQ- Z
X-YLKDQ- Z
X-RYLKDQ- Z
X-ERYLKDQ- Z
X-VERYLKDQ- Z
X-AVERYLKDQ- Z
X-LAVERYLKDQ- Z
X-ILAVERYLKDQ- Z
X-RILAVERYLKDQ- Z
X-ARILAVERYLKDQ- Z
X-QARILAVERYLKDQ- Z
X-LQARILAVERYLKDQ- Z
X-QLQARILAVERYLKDQ- Z
X-KQLQARILAVERYLKDQ- Z
X-IKQLQARILAVERYLKDQ- Z
X-QG~~IK~~QLQARILAVERYLKDQ- Z
X-WQ~~G~~IKQLQARILAVERYLKDQ- Z
X-VWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-TVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-LTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-QLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-LQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-LLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-QHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-QQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-AQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-EAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-IEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-AIEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-RAIEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-LRAIEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-LLRAIEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-NLLRAIEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
X-NNLLRAIEAQQHLLQLTVWQ~~G~~IKQLQARILAVERYLKDQ- Z
(SEQ ID NO:89)

(^{*} The one-letter amino acid code is used.)

On page 40, lines 1-26, please replace the table under the heading "TABLE III" with the following text:

TABLE III

HIV-2_{NIH2} DP178 ANALOG (SEQ ID NO:7) CARBOXY TRUNCATIONS *

X-LEA-Z
X-LEAN-Z
X-LEANI-Z
X-LEANIS-Z
X-LEANISQ-Z
X-LEANISQS-Z
X-LEANISQSL-Z
X-LEANISQSLE-Z
X-LEANISQSLEQ-Z
X-LEANISQSLEQA-Z
X-LEANISQSLEQAQ-Z
X-LEANISQSLEQAQI-Z
X-LEANISQSLEQAQIQ-Z
X-LEANISQSLEQAQIQQ-Z
X-LEANISQSLEQAQIQQE-Z
X-LEANISQSLEQAQIQQEK-Z
X-LEANISQSLEQAQIQQEKN-Z
X-LEANISQSLEQAQIQQEKNM-Z
X-LEANISQSLEQAQIQQEKNMY-Z
X-LEANISQSLEQAQIQQEKNMYE-Z
X-LEANISQSLEQAQIQQEKNMYEL-Z
X-LEANISQSLEQAQIQQEKNMYELQ-Z
X-LEANISQSLEQAQIQQEKNMYELQK-Z
X-LEANISQSLEQAQIQQEKNMYELQKL-Z
X-LEANISQSLEQAQIQQEKNMYELQKLN-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNS-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSW-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWD-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDV-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDVF-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDVFT-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTN-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTNW-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-
Z (SEQ ID NO:7)

(* The one-letter amino acid code is used.)

On page 41, lines 1-26, please replace the table under the heading "TABLE IV" with the following text:

TABLE IV

HIV-2_{NIHZ} DP178 ANALOG (SEQ ID NO:7) AMINO TRUNCATIONS*

X-NWL-Z
X-TNWL-Z
X-FTNWL-Z
X-VFTNWL-Z
X-DVFTNWL-Z
X-WDVFTNWL-Z
X-SWDVFTNWL-Z
X-NSWDVFTNWL-Z
X-LNSWDVFTNWL-Z
X-KLNSWDVFTNWL-Z
X-QKLNSWDVFTNWL-Z
X-LQKLNSWDVFTNWL-Z
X-ELQKLNSWDVFTNWL-Z
X-YELQKLNSWDVFTNWL-Z
X-MYELQKLNSWDVFTNWL-Z
X-NMYELQKLNSWDVFTNWL-Z
X-KNMYELQKLNSWDVFTNWL-Z
X-EKNMYELQKLNSWDVFTNWL-Z
X-QEKNMYELQKLNSWDVFTNWL-Z
X-QQEKNMYELQKLNSWDVFTNWL-Z
X-IQQEKNMYELQKLNSWDVFTNWL-Z
X-QIQQEKNMYELQKLNSWDVFTNWL-Z
X-AQIQQEKNMYELQKLNSWDVFTNWL-Z
X-QAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-EQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-LEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-SLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-QSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-SQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-ISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-NISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-ANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-EANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
X-LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL-Z
(SEQ ID NO:7)

(* The one-letter amino acid code is used.)

On page 319, lines 1-36, please replace the table under the heading "Table XV" with the following text:

TABLE XV

RESPIRATORY SYNCYTIAL VIRUS DP107 F2 REGION ANALOG (SEQ ID NO:16)
CARBOXY TRUNCATIONS*

X-YTS-Z
X-YTSV-Z
X-YTSVI-Z
X-YTSVIT-Z
X-YTSVITI-Z
X-YTSVITIE-Z
X-YTSVITIEL-Z
X-YTSVITIELS-Z
X-YTSVITIELSN-Z
X-YTSVITIELSNI-Z
X-YTSVITIELSNIK-Z
X-YTSVITIELSNIKE-Z
X-YTSVITIELSNIKEN-Z
X-YTSVITIELSNIKENK-Z
X-YTSVITIELSNIKENKC-Z
X-YTSVITIELSNIKENKCN-Z
X-YTSVITIELSNIKENKCNG-Z
X-YTSVITIELSNIKENKCNGT-Z
X-YTSVITIELSNIKENKCNGTD-Z
X-YTSVITIELSNIKENKCNGTDA-Z
X-YTSVITIELSNIKENKCNGTDAK-Z
X-YTSVITIELSNIKENKCNGTDAKV-Z
X-YTSVITIELSNIKENKCNGTDAKVK-Z
X-YTSVITIELSNIKENKCNGTDAKVKL-Z
X-YTSVITIELSNIKENKCNGTDAKVKLI-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIK-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQ-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQE-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQEL-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELD-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDK-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKY-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYK-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKN-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNA-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAV-Z

X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAV-T-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTE-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTEL-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQ-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQL-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLL-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLM-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQ-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQS-Z
X-YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z
(SEQ ID NO:16)

(*)The one letter amino acid code is used.)

On page 321, lines 1-35, please replace the table under the heading "TABLE XVI" with the following text:

<u>TABLE XVI</u>	
<u>RESPIRATORY SYNCYTIAL VIRUS</u>	
<u>F2 DP178/DP107 REGION ANALOG (SEQ ID NO:16) AMINO TRUNCATIONS*</u>	
	X-QST-Z
	X-MQST-Z
	X-LMQST-Z
	X-LLMQST-Z
	X-QLLMQST-Z
	X-LQLLMQST-Z
	X-ELQLLMQST-Z
	X-TELQLLMQST-Z
	X-VTELQLLMQST-Z
	X-AVTELQLLMQST-Z
	X-NAVTELQLLMQST-Z
	X-KNAVTELQLLMQST-Z
	X-YKNAVTELQLLMQST-Z
	X-KYKNAVTELQLLMQST-Z
	X-DKYKNAVTELQLLMQST-Z
	X-LDKYKNAVTELQLLMQST-Z
	X-ELDKYKNAVTELQLLMQST-Z
	X-QELDKYKNAVTELQLLMQST-Z
	X-KQELDKYKNAVTELQLLMQST-Z
	X-IKQELDKYKNAVTELQLLMQST-Z
	X-LIKQELDKYKNAVTELQLLMQST-Z
	X-KLIKQELDKYKNAVTELQLLMQST-Z
	X-VKLIKQELDKYKNAVTELQLLMQST-Z
	X-KVKLIKQELDKYKNAVTELQLLMQST-Z
	X-AKVLIKQELDKYKNAVTELQLLMQST-Z
	X-DAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-TDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-GTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-NGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-CNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-KCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-NKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-KENKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-IKENKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-NIKENKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-SNIKENKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-LSNIKENKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z
	X-ELSNIKENKCNGTDAKVLIKQELDKYKNAVTELQLLMQST-Z

Application No. 08/487,355
Rule 312 Amendment of December 31, 2003
Reply to October 1, 2003 Notice of Allowance

X-IELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z
X-TIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z
X-ITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z
X-VITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z
X-SVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z
X-TSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST-Z

(*The one letter amino acid code is used.)

On page 323, lines 1-28, please replace the table under the heading "TABLE XVII" with the following text:

TABLE XVII
RESPIRATORY SYNCYTIAL VIRUS F1 DP178 REGION ANALOG (SEQ ID NO:17)
CARBOXY TRUNCATIONS*

X-FYD-Z
X-FYDP-Z
X-FYDPL-Z
X-FYDPLV-Z
X-FYDPLVF-Z
X-FYDPLVFP-Z
X-FYDPLVFPS-Z
X-FYDPLVFPSD-Z
X-FYDPLVFPSDE-Z
X-FYDPLVFPSDEF-Z
X-FYDPLVFPSDEFD-Z
X-FYDPLVFPSDEFDA-Z
X-FYDPLVFPSDEFDAS-Z
X-FYDPLVFPSDEFDASI-Z
X-FYDPLVFPSDEFDASIS-Z
X-FYDPLVFPSDEFDASISQ-Z
X-FYDPLVFPSDEFDASISQV-Z
X-FYDPLVFPSDEFDASISQVN-Z
X-FYDPLVFPSDEFDASISQVNE-Z
X-FYDPLVFPSDEFDASISQVNEK-Z
X-FYDPLVFPSDEFDASISQVNEKI-Z
X-FYDPLVFPSDEFDASISQVNEKIN-Z
X-FYDPLVFPSDEFDASISQVNEKINQ-Z
X-FYDPLVFPSDEFDASISQVNEKINQS-Z
X-FYDPLVFPSDEFDASISQVNEKINQSL-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLA-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAF-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFI-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIR-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIRK-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIRKS-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSD-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSDE-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSDEL-Z
X-FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSDELL-Z
(SEQ ID NO:17)

(*The one letter amino acid code is used.)

On page 325, lines 1-27, please replace the table under the heading "TABLE XVIII" with the following text:

TABLE XVIII
RESPIRATORY SYNCYTIAL VIRUS F1 DP178 REGION ANALOG (SEQ ID NO:17)
AMINO TRUNCATIONS*

X-DELL-Z
X-SDELL-Z
X-KSDELL-Z
X-RKSDELL-Z
X-IRKSDELL-Z
X-FIRKSDELL-Z
X-AFIRKSDELL-Z
X-LAFIRKSDELL-Z
X-SLAFIRKSDELL-Z
X-QSLAFIRKSDELL-Z
X-NQSLAFIRKSDELL-Z
X-INQSLAFIRKSDELL-Z
X-KINQSLAFIRKSDELL-Z
X-EKINQSLAFIRKSDELL-Z
X-NEKINQSLAFIRKSDELL-Z
X-VNEKINQSLAFIRKSDELL-Z
X-QVNEKINQSLAFIRKSDELL-Z
X-SQVNEKINQSLAFIRKSDELL-Z
X-ISQVNEKINQSLAFIRKSDELL-Z
X-SISQVNEKINQSLAFIRKSDELL-Z
X-ASISQVNEKINQSLAFIRKSDELL-Z
X-DASISQVNEKINQSLAFIRKSDELL-Z
X-FDASISQVNEKINQSLAFIRKSDELL-Z
X-EFDASISQVNEKINQSLAFIRKSDELL-Z
X-DEFDASISQVNEKINQSLAFIRKSDELL-Z
X-SDEFDASISQVNEKINQSLAFIRKSDELL-Z
X-PSDEFDASISQVNEKINQSLAFIRKSDELL-Z
X-FPSDEFDASISQVNEKINQSLAFIRKSDELL-Z
X-VFPSDEFDASISQVNEKINQSLAFIRKSDELL-Z
X-LVFPSEFDASISQVNEKINQSLAFIRKSDELL-Z
X-PLVFPSEFDASISQVNEKINQSLAFIRKSDELL-Z
X-DPLVFPSEFDASISQVNEKINQSLAFIRKSDELL-Z
X-YDPLVFPSEFDASISQVNEKINQSLAFIRKSDELL-Z

(*The one letter amino acid code is used.)

On page 326, lines 1-26, please replace the table under the heading "TABLE XIX" with the following text:

TABLE XIX
HUMAN PARAINFLUENZA VIRUS 3 F1 REGION DP178 ANALOG (SEQ ID NO:18)
CARBOXY TRUNCATIONS*

X-ITL-Z
X-ITLN-Z
X-ITLNN-Z
X-ITLNNS-Z
X-ITLNNSV-Z
X-ITLNNSVA-Z
X-ITLNNSVAL-Z
X-ITLNNSVALD-Z
X-ITLNNSVALDP-Z
X-ITLNNSVALDPI-Z
X-ITLNNSVALDPID-Z
X-ITLNNSVALDPIDI-Z
X-ITLNNSVALDPIDIS-Z
X-ITLNNSVALDPIDISI-Z
X-ITLNNSVALDPIDISIE-Z
X-ITLNNSVALDPIDISIEL-Z
X-ITLNNSVALDPIDISIELN-Z
X-ITLNNSVALDPIDISIELNK-Z
X-ITLNNSVALDPIDISIELNKA-Z
X-ITLNNSVALDPIDISIELNKAK-Z
X-ITLNNSVALDPIDISIELNKAKS-Z
X-ITLNNSVALDPIDISIELNKAKSD-Z
X-ITLNNSVALDPIDISIELNKAKSDL-Z
X-ITLNNSVALDPIDISIELNKAKSDLE-Z
X-ITLNNSVALDPIDISIELNKAKSDLEE-Z
X-ITLNNSVALDPIDISIELNKAKSDLEES-Z
X-ITLNNSVALDPIDISIELNKAKSDLEESK-Z
X-ITLNNSVALDPIDISIELNKAKSDLEESKE-Z
X-ITLNNSVALDPIDISIELNKAKSDLEESKEW-Z
X-ITLNNSVALDPIDISIELNKAKSDLEESKEWIR-Z
X-ITLNNSVALDPIDISIELNKAKSDLEESKEWIRR-Z
X-ITLNNSVALDPIDISIELNKAKSDLEESKEWIRRS-Z
(SEQ ID NO:18)

(*The one letter amino acid code is used.)

On page 327, lines 1-26, please replace the table under the heading "TABLE XX"
with the following text:

TABLE XX
HUMAN PARAINFLUENZA VIRUS 3 F1 REGION DP178 ANALOG (SEQ ID NO:18)
AMINO TRUNCATIONS*

X-RRS-Z
X-IRRS-Z
X-WIRRS-Z
X-EWIRRS-Z
X-KEWIRRS-Z
X-SKEWIRRS-Z
X-ESKEWIRRS-Z
X-EESKEWIRRS-Z
X-LEESKEWIRRS-Z
X-DLEESKEWIRRS-Z
X-SDLEESKEWIRRS-Z
X-KSDLEESKEWIRRS-Z
X-AKSDLEESKEWIRRS-Z
X-KAKSDLEESKEWIRRS-Z
X-NKAKSDLEESKEWIRRS-Z
X-LNKAKSDLEESKEWIRRS-Z
X-ELNKAKSDLEESKEWIRRS-Z
X-IELNKAKSDLEESKEWIRRS-Z
X-SIELNKAKSDLEESKEWIRRS-Z
X-ISIELNKAKSDLEESKEWIRRS-Z
X-DISIELNKAKSDLEESKEWIRRS-Z
X-IDISIELNKAKSDLEESKEWIRRS-Z
X-PIDISIELNKAKSDLEESKEWIRRS-Z
X-DPIDISIELNKAKSDLEESKEWIRRS-Z
X-LDPIDISIELNKAKSDLEESKEWIRRS-Z
X-ALDPIDISIELNKAKSDLEESKEWIRRS-Z
X-VALDPIDISIELNKAKSDLEESKEWIRRS-Z
X-SVALDPIDISIELNKAKSDLEESKEWIRRS-Z
X-NSVALDPIDISIELNKAKSDLEESKEWIRRS-Z
X-NNSVALDPIDISIELNKAKSDLEESKEWIRRS-Z
X-LNNSVALDPIDISIELNKAKSDLEESKEWIRRS-Z
X-TLNNSVALDPIDISIELNKAKSDLEESKEWIRRS-Z

(*The one letter amino acid code is used.)

On page 328, lines 1-25, please replace the table under the heading "TABLE XXI" with the following text:

TABLE XXI
HUMAN PARAINFLUENZA VIRUS 3 F1 REGION DP107 ANALOG (SEQ ID NO:19)
CARBOXY TRUNCATIONS*

X-ALG-Z
X-ALGV-Z
X-ALGVA-Z
X-ALGVAT-Z
X-ALGVATS-Z
X-ALGVATSA-Z
X-ALGVATSAQ-Z
X-ALGVATSAQI-Z
X-ALGVATSAQIT-Z
X-ALGVATSAQITA-Z
X-ALGVATSAQITAA-Z
X-ALGVATSAQITA-AV-Z
X-ALGVATSAQITA-AVA-Z
X-ALGVATSAQITA-AVAL-Z
X-ALGVATSAQITA-AVALV-Z
X-ALGVATSAQITA-AVALVE-Z
X-ALGVATSAQITA-AVALVEA-Z
X-ALGVATSAQITA-AVALVEAK-Z
X-ALGVATSAQITA-AVALVEAKQ-Z
X-ALGVATSAQITA-AVALVEAKQA-Z
X-ALGVATSAQITA-AVALVEAKQAR-Z
X-ALGVATSAQITA-AVALVEAKQARS-Z
X-ALGVATSAQITA-AVALVEAKQARSD-Z
X-ALGVATSAQITA-AVALVEAKQARSDI-Z
X-ALGVATSAQITA-AVALVEAKQARSDIE-Z
X-ALGVATSAQITA-AVALVEAKQARSDIEK-Z
X-ALGVATSAQITA-AVALVEAKQARSDIEKL-Z
X-ALGVATSAQITA-AVALVEAKQARSDIEKLK-Z
X-ALGVATSAQITA-AVALVEAKQARSDIEKLKE-Z
X-ALGVATSAQITA-AVALVEAKQARSDIEKLKEAI-Z
X-ALGVATSAQITA-AVALVEAKQARSDIEKLKEAIR-Z
(SEQ ID NO:19)

(*The one letter amino acid code is used.)

On page 329, lines 1-26, please replace the table under the heading "TABLE XXII" with the following text:

TABLE XXII
HUMAN PARAINFLUENZA VIRUS 3 F1 REGION DP107 ANALOG (SEQ ID NO:19)
AMINO TRUNCATIONS*

X-IRD-Z
X-AIRD-Z
X-EAIRD-Z
X-KEAIRD-Z
X-LKEAIRD-Z
X-KLKEAIRD-Z
X-EKLKEAIRD-Z
X-IEKLKEAIRD-Z
X-DIEKLKEAIRD-Z
X-SDIEKLKEAIRD-Z
X-RSDIEKLKEAIRD-Z
X-ARSDIEKLKEAIRD-Z
X-QARSDIEKLKEAIRD-Z
X-KQARSDIEKLKEAIRD-Z
X-AKQARSDIEKLKEAIRD-Z
X-EAKQARSDIEKLKEAIRD-Z
X-VEAKQARSDIEKLKEAIRD-Z
X-LVEAKQARSDIEKLKEAIRD-Z
X-ALVEAKQARSDIEKLKEAIRD-Z
X-VALVEAKQARSDIEKLKEAIRD-Z
X-AVALVEAKQARSDIEKLKEAIRD-Z
X-AAVALVEAKQARSDIEKLKEAIRD-Z
X-TAVALVEAKQARSDIEKLKEAIRD-Z
X-ITAVALVEAKQARSDIEKLKEAIRD-Z
X-QITAVALVEAKQARSDIEKLKEAIRD-Z
X-AQITAVALVEAKQARSDIEKLKEAIRD-Z
X-SAQITAVALVEAKQARSDIEKLKEAIRD-Z
X-TSAQITAVALVEAKQARSDIEKLKEAIRD-Z
X-ATSAQITAVALVEAKQARSDIEKLKEAIRD-Z
X-VATSAQITAVALVEAKQARSDIEKLKEAIRD-Z
X-GVATSAQITAVALVEAKQARSDIEKLKEAIRD-Z
X-LGVATSAQITAVALVEAKQARSDIEKLKEAIRD-Z

(*The one letter amino acid code is used.)

On page 382, line 30 to page 383, line 6, please replace the paragraph beginning "Peptides: The peptides characterized" with the following paragraph:

Peptides: The peptides characterized in the study presented herein were:

- 1) peptides T-142 to T-155 ~~and T-575~~, as shown in ~~FIG. 27A~~ FIGS. 27A-B, and peptides T-22 to T-27, T-68, T-334 and T-371 to T-375 and T-575, as shown in ~~FIG. 27B~~ FIG. 27C;
- 2) peptides T-120 to T-141 and T-576, as shown in ~~FIG. 27B~~ FIGS. 27D-E, and peptides T-12, T-13, T-15, T-19, T-28 to T-30, T-66, T-69, T-70 and T-576, as shown in ~~FIG. 27D~~ FIG. 27E; and
- 3) peptides T-67 and T-104 to T-119 ~~and T-384~~, as shown in ~~FIG. 28A~~ FIGS. 28A-B, and peptides T-71, T-384, T-613 to T-617, T-662 to T-676 and T-730, as shown in ~~FIG. 28B~~ FIG. 28C.

On page 383, lines 20-25, please replace the paragraph beginning "The data summarized" with the following paragraph:

The data summarized in ~~FIGS. 27A-B~~ FIGS. 27A-C and ~~28A-B~~ 28A-C represent antiviral and structural information obtained from peptides derived from the RSV F2 DP178/DP107-like F2 region (~~FIG. 27A-B~~) (FIGS. 27A-C), the RSV F1 DP-107-like region (~~FIG. 27C-D~~) (FIGS. 27D-F) and the RSV DP178-like F2 F1 region (~~FIG. 28A-B~~) (FIGS. 28A-C).

On page 383, line 26 to page 384, line 4, please replace the paragraph beginning "As shown in FIGS. 27A-D" with the following paragraph:

As shown in ~~FIGS. 27A-D~~ 27A-F, a number of the RSV DP178/DP107-like peptides exhibited a detectable level of antiviral activity. Peptides from the RSV DP178/DP107-like F2 region (~~FIG. 27A-B~~) (FIGS. 27A-C), for example, T-142 to T-145 and T-334 purified peptides, exhibited detectable levels of antiviral activity, as evidenced by their IC₅₀ values. Further, a number of RSV F1 DP107-like peptides (~~FIG. 27C-D~~) (FIGS. 27D-F) exhibited a sizable level of antiviral activity as purified peptides, including, for example, peptides T-124 to T-127, T-131, T-135 and T-137 to T-139, as demonstrated by their low IC₅₀ values. In

addition, CD analysis ~~FIG. 27A, 27C~~ (FIGS. 27B, 27E) reveals that many of the peptides exhibit some detectable level of helical structure.

On page 384, lines 5-12, please replace the paragraph beginning “The results summarized in FIG. 28A-B” with the following paragraph:

The results summarized in ~~FIG. 28A-B~~ FIGS. 28A-C demonstrate that a number of DP178-like purified peptides exhibit a range of potent anti-viral activity. These peptides include, for example, T-67, T-104, T-105 and T-107 to T-119, as listed in ~~FIG. 28A~~ FIGS. 28A-B, and T-665 to T-669 and T-671 to T-673, as listed in ~~FIG. 28B~~ FIG. 28C. In addition, some of the DP178-like peptides exhibited some level of helicity.

On page 386, lines 15-33, please replace the paragraph beginning “Peptides: The peptides characterized in the study”

Peptides: The peptides characterized in the study presented herein were:

- 1) Peptides 157 to 188, as shown in ~~FIG. 29A~~ FIGS. 29A-C, and peptides T-38 to T-40, T-42 to T-46 and T-582, as shown in ~~FIG. 29B~~ FIGS. 29D-E. These peptides are derived from the DP107 region of the HPIV3 F1 fusion protein (represented by HPF3 107, as shown in ~~FIG. 29A~~ FIGS. 29A-B); and
- 2) Peptides 189 to 210, as shown in ~~FIG. 30A~~ FIGS. 30A-B, and T-269, T-626, T-383 and T-577 to T-579, as shown in ~~FIG. 30B~~ FIG. 30C. These peptides are primarily derived from the DP178 region of the HPIV3 F1 fusion protein (represented by HPF3 178, as shown in FIG. 30A). Peptide T-626 contains two mutated amino acid residues (~~represented by a shaded background~~). Additionally, peptide T-577 represents F1 amino acids 65-100, T-578 represents F1 amino acids 207-242 and T-579 represents F1 amino acids 273-309.

On page 387, lines 4-9, please replace the paragraph beginning “The data summarized in FIGS. 29A-C” with the following paragraph:

The data summarized in ~~FIGS. 29A-C~~ FIGS. 29A-E and ~~30A-B~~ 30A-C represent antiviral and structural information obtained from peptides derived from the HPIV3 fusion

protein DP107-like region (~~FIG. 29A-C~~) (FIGS. 29A-E) and the HPIV3 fusion protein DP178-like region (~~FIG. 30A-B~~) (FIGS. 30A-C).

On page 387, lines 10-15, please replace the paragraph beginning “As shown in FIG. 29A-B” with the following paragraph:

As shown in ~~FIG. 29A-B~~ FIGS. 29A-E, a number of the HPIV3 DP107-like peptides exhibited potent levels of antiviral activity. These peptides include, for example, peptides T-40, T-172 to T-175, T-178, T-184 and T-185.

On page 387, lines 14-19, please replace the paragraph beginning “CD analysis reveals” with the following paragraph:

CD analysis reveals that a number of the peptides exhibit detectable to substantial level of helical structure, which is summarized in FIG. 29C. ~~The CD spectra for one of the peptides, 184, which exhibits substantial helicity is summarized in FIG. 29C.~~

On page 387, lines 19-27, please replace the paragraph beginning “The results summarized in FIG. 30A-B” with the following paragraph:

The results summarized in ~~FIG. 30A-B~~ FIGS. 30A-C demonstrate that a number of the DP178-like peptides tested exhibit a range of anti-viral activity. These peptides include, for example, peptides 194 to 211, as evidence by their low IC₅₀ values. In fact, peptides 201 to 205 exhibit IC₅₀ values in the nanogram/ml range. In addition, many of the DP178-like peptides exhibited some level of helicity.

On page 397, lines 28-31, please replace the paragraph beginning “The data summarized in FIG. 47” with the following paragraph:

The data summarized in ~~FIG. 47~~ FIGS. 47A-B ~~represents~~ represent antiviral and structural information obtained via “peptide walks” through the DP178-like region of the MeV fusion protein.

On page 397, line 32 to page 398, line 5, please replace the paragraph beginning “As shown in FIG. 47” with the following paragraph:

As shown in ~~FIG. 47~~ FIGS. 47A-B, the MeV DP178-like peptides exhibited a range of antiviral activity as crude peptides. Several of these peptides were chosen for purification and further antiviral characterization. The IC₅₀ values for such peptides were determined, as shown in ~~FIG. 47~~ FIGS. 47B, and ranged from 1.35 µg/ml (T-257B1/C1) to 0.072 µg/ml (T-265B1). None of the DP178-like peptides showed, by CD analysis, a detectable level of helicity.

On page 398, lines 27-30, please replace the paragraph beginning “Peptides: The peptides characterized in the study” with the following paragraph:

Peptides: The peptides characterized in the study presented herein were peptides T-391 to T-400, as shown in ~~FIG. 48~~ FIGS. 48A-B. These peptides represent a walk through the DP178-like region of the SIV TM protein.

On page 399, lines 2-4, please replace the paragraph beginning “The data summarized in FIG. 48” with the following paragraph:

The data summarized in ~~FIG. 48~~ FIGS. 48A-B ~~represents~~ represent antiviral information obtained via “peptide walks” through the DP178-like region of the SIV TM protein.

On page 399, lines 5-7, please replace the paragraph beginning “As shown in FIG. 48” with the following paragraph:

As shown in ~~FIG. 48~~ FIGS. 48A-B, peptides T-391 to T-400 were tested and exhibited a potent antiviral activity as crude peptides.

On page 399, lines 22-26, please replace the paragraph beginning “Anti-HIV assays: The antiviral assays performed were as those described, above, in Section 6.1. Assays

utilized HIV-1/IIIB and/or HIV-2 NIHZ isolates. Purified peptides were used, unless otherwise noted in ~~FIGS. 49A-C~~ FIGS. 49A-L.

On page 399, line 27 to page 400, line 5, please replace the paragraph beginning “Peptides: The peptides characterized in the study” with the following paragraph:

Peptides: The peptides characterized in the study presented herein were:

- 1) ~~FIGS. 49A-C~~ FIGS. 49A-L present peptides derived from the region around and containing the DP178 region of the HIV-1 BRU isolate. Specifically, this region spanned from gp41 amino acid residue 615 to amino acid residue 717. The peptides listed contain truncations of this region and/or mutations which vary from the DP178 ~~sequence~~ amino acid sequence. Further, certain of the peptides have had amino- and/or carboxy-terminal groups either added or removed, as indicated in the figures; and
- 2) ~~FIG. 50.~~ FIGS. 50A-B ~~presents~~ present peptides which represent truncations of DP107 and/or the gp41 region surrounding the DP107 amino acid sequence of HIV-1 BRU isolate. Certain of the peptides are unblocked or biotinylated, as indicated in the figure.

On page 400, lines 16-19, please replace the paragraph beginning “Anti-HIV antiviral data” with the following paragraph:

Anti-HIV antiviral data was obtained with the group 1 DP178-derived peptides listed in ~~FIG. 49A-C~~ FIGS. 49A-L. The full-length, non-mutant DP178 peptide (referred to in ~~FIG. 49A-C~~ FIGS. 49A-L as T20) results shown are for 4 ng/ml.

On page 400, lines 20-31, please replace the paragraph beginning “In FIG. 49A” with the following paragraph:

In ~~FIG. 49A~~ FIGS. 49A-D, a number of the DP178 truncations exhibited a high level of antiviral activity, as evidenced by their low IC₅₀ values. These include, for example, test peptides T-50, T-624, T-636 to T-641, T-645 to T-650, T-652 to T-654 and T-656. T-50

represents a test peptide which contains a point mutation, ~~as indicated by the residue's shaded background~~ (see the "G" glycine residue substitution for a "H" histidine residue in FIG. 49A). The HIV-1-derived test peptides exhibited a distinct strain-specific antiviral activity, in that none of the peptides tested on the HIV-2 NIHZ isolate demonstrated appreciable ~~anti-HIV-2~~ anti-HIV-2 antiviral activity.

On page 400, line 31 to page 401, line 7, please replace the paragraph beginning "Among the peptides listed in FIG. 49B" with the following paragraph:

Among the peptides listed in ~~FIG. 49B~~ FIGS. 49E-H, are test peptides representing the amino (T-4) and carboxy (T-3) terminal halves of DP178 were tested. The amino terminal peptide was not active ($IC_{50} > 400 \mu\text{g/ml}$), whereas the carboxy terminal peptide showed potent antiviral activity ($IC_{50} = 3 \mu\text{g/ml}$). A number of additional test peptides also exhibited a high level of antiviral activity. These included, for example, T-61/T-102, T-217 to T-221, T-235, T-381, T-677, T-377, T-590, T-378, T-591, T-271 to T-272, T-611, T-222 to T-223 and T-60/T-224. Certain of the antiviral peptides contain point mutations and/or amino acid residue additions which vary from the DP178 amino acid sequence.

On page 400, lines 8-12, please replace the paragraph beginning "In FIG. 49C" with the following paragraph:

In ~~FIG. 49C~~ FIGS. 49I-L, point mutations and/or amino and/or carboxy-terminal modifications are introduced into the DP178 amino acid sequence itself. As shown in the ~~figure~~ figures, the majority of the test peptides listed exhibit potent antiviral activity.

On page 400, lines 13-20, please replace the paragraph beginning "Truncations of the DP107 peptide" with the following paragraph:

Truncations of the DP107 peptide (referred to in ~~IG. 50~~ FIGS. 50A-B as T21) were also produced and tested, as shown in ~~FIG. 50~~ FIGS. 50A-B. ~~FIG. 50~~ FIGS. 50A-B also ~~presents~~ present data concerning blocked and unblocked peptides which contain additional amino acid residues from the gp41 region in which the DP107 sequence resides. Most of these peptides showed antiviral activity, as evidenced by their low IC_{50} values.

On page 403, lines 13-27, please replace the paragraph beginning “The test peptides’ ability” with the following paragraph:

The test peptides’ ability to inhibit Zebra protein DNA binding was assayed via the EMSA assays described, above, in Section 28.1. The data summarized in ~~FIG. 51A-B~~ FIGS. 51A-C ~~presents~~ present the results of EMSA assays of the listed EBV test peptides. These peptides represent ~~one~~ amino acid “walks” through the region containing, and flanked on both sides by, the DP178/DP107 analog region identified in the Example presented in Section 20, above, and shown as ~~shown~~ in FIG. 33. As shown in ~~FIG. 51A-B~~ FIGS. 51A-C, the region from which these peptides are derived lies ~~from~~ between EBV Zebra protein amino acid residue 173 to 246. A number of the test peptides which were assayed exhibited an ability to inhibit Zebra protein homodimer DNA binding, including 439, 441, 444 and 445.